Supplemental Specification
2005 Standard Specification Book

SECTION 01280

MEASUREMENT

Delete Section 01280 in its entirety and replace with the following:

PART 1 GENERAL

1.1 MEASUREMENT OF QUANTITIES

A. All work completed under the contract is measured in U. S. standard measure.
   1. The Department measures and determines quantities of material furnished and work performed in accordance with the measurement and payment section of the contract.
   2. The methods of measurement and computations for determining quantities of material furnished and of work performed under the contract are methods generally recognized as conforming to good engineering practice.

B. When the term "plan quantity" is indicated in the contract bid item designation:
   1. Accept the estimated quantity in the bid proposal as the final quantity for which payment will be made, unless the Engineer revises the plan dimensions through an approved change order.
      a. The Engineer adjusts the final quantity for payment by the amount of increase or decrease to the estimated quantity in the bid proposal represented by authorized changes in dimensions.
   2. Request an adjustment to the final quantity for payment if an error is discovered in the estimated quantity in the bid proposal.
      a. Provide all computations, plots, and supporting documentation necessary for the Engineer to verify the error and determine the final quantity for payment.
      b. All work associated with providing computations, plots, and supporting documentation is at no cost to the Department, except:
         1) Work required to provide computations, plots, and supporting documentation may be paid for as extra work when the final quantity differs from the estimated quantity by more than 10 percent.

C. Lump sum or each:
   1. The Department measures the complete structure or structural unit, signal or lighting system, or other items of work specified in the bid proposal to be measured by lump sum or each to include all necessary work, fittings, and accessories for a complete unit or system.

D. Length:
   1. Items measured by the foot such as pipe culverts, guardrail, underdrains, etc. are measured parallel with the base or foundations upon which the structures are placed.
   2. The term “station” when used as a definition or term of measurement is 100 linear feet.

E. Area:
   1. Unless otherwise specified, the Department uses horizontal longitudinal and plan (neat) transverse measurements.

F. Volume:
   1. The Department measures structures using plan (neat) dimensions, or altered dimensions when approved by the Engineer to fit field conditions.
   2. The Department uses average end area or computer generated Digital Terrain Model (DTM) method for computing volumes of excavation.
   3. Materials specified to be measured by the cubic yard may be weighed and converted to cubic yard for payment purposes, when requested by the Contractor and approved by the Engineer in writing.
      a. Agree to the factors for conversion from weight measurement to volume as determined by the Engineer before using this method of measurement for computing pay quantities.

G. Weight:
   1. The term “ton” means 2000 pounds avoirdupois.
   2. Measure aggregate weight in the saturated surface dry condition.

H. Standard manufactured items such as fence, wire, plates, rolled shapes, pipe conduit, etc., identified by gauge, unit, weight, section dimensions, etc.:
   1. Unless otherwise specified, the Department uses nominal weights or dimensions and industry-manufacturing tolerances.

I. Plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing:
   1. The Department measures thickness in fractions of inches.

1.2 WEIGHING REQUIREMENTS AND PROCEDURES

A. Weigh all materials that are measured or proportioned by weight, or contract items measured by the ton, such as aggregates and asphalt materials, on scales that have been approved, certified, and which meet specification requirements.
   1. Obtain certified haul truck tares at times as directed by the Engineer and place a legible identification mark on each truck.
   2. The Department may return any loads of material that appear to be deficient or questionable to be reweighed.

B. Furnish, erect, have certified, and maintain, or use permanently installed and certified commercial scales for weighing highway and bridge construction materials that are required to be proportioned or measured and paid for by weight:
   1. Scales must be accurate within the limits set by the laws of the State of Utah, meeting requirements of the U.S. Bureau of Standards.
   2. Scales must bear a current seal of acceptance from the State of Utah Department of Agriculture, Division of Weights and Measures.
   3. Have the Utah State Department of Agriculture Division of Weights and Measures inspect and seal all scales at least once a year and after each setup before use, or as requested by the Engineer.
   4. Install and maintain platform scales with the platform level and with rigid bulkheads at each end.
      a. Platform scales must be of adequate size and capacity so the entire power unit and hauling unit can be weighed at the same time.
   5. Physically arrange electronic, beam, dials, platform, and other scale equipment for convenient and safe viewing by the operator and inspector.

C. Include costs for furnishing, installing, certifying or testing, and maintaining scales, furnishing scale house, materials for proportioning or payment, and all other items specified in this section for the weighing of highway and bridge construction materials in the unit contract prices for the various pay items of the contract.

D. Request written approval to use alternate weighing devices.

PART 2 PRODUCTS Not used

PART 3 EXECUTION Not used

END OF SECTION